

In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously presented) A process for manufacturing complex parts and devices comprising:
 - (a) utilizing a CAD environment to design a part or device to be created;
 - (b) converting the CAD designed part or device into a heterogeneous material and multi-part assembly model which can be used for multi-nozzle printing; and
 - (c) printing the designed part or device using multiple, different, specialized nozzles.
2. (Previously Presented) The process of claim 1 further comprising using Boolean, scaling, smoothing, or mirroring to modify the CAD design prior to conversion into a heterogeneous material and multi-part assembly model.
3. (Currently Amended) The process of claim 1 wherein in step (a) further comprises importing data taken from MRI, CT or other patient specific data ~~is imported~~ into the CAD environment to design the part or device to be created.
4. (Original) The process of claim 1 wherein a biomimetic and non-biomimetic feature is designed into the part or device.
5. (Previously Presented) The process of claim 1 wherein the part or device comprises a tissue engineering device and printing in step (c) involves direct deposition of cells or biological factors.

6. (Original) The process of claim 5 wherein direct cell deposition improves histological accuracy, cell ratios, and spatial patterning of cells in the part or device.

7. (Original) The process of claim 1 wherein the part or device produced comprises an artificial organ, a tissue scaffold, an artificial vasculature or channel system, or a sample for cytotoxicity testing.

8. (Original) The process of claim 1 wherein the part or device produced comprises a biochip, biosensor, bionic, cybernetic, mechanoactive, or a bioactive tissue scaffold.

9. (Original) The process of claim 1 wherein the part or device is used in drug delivery.

10. (Previously presented) A multi-nozzle biopolymer deposition apparatus comprising:

(a) a data processing system which processes a designed scaffold model and converts it into a layered process tool path;

(b) a motion control system driven by the layered process tool path; and

(c) a material delivery system comprising multiple nozzles of different types and sizes for simultaneously depositing specified hydrogels with different viscosities thereby constructing a scaffold from the designed scaffold model.